FIG. 1

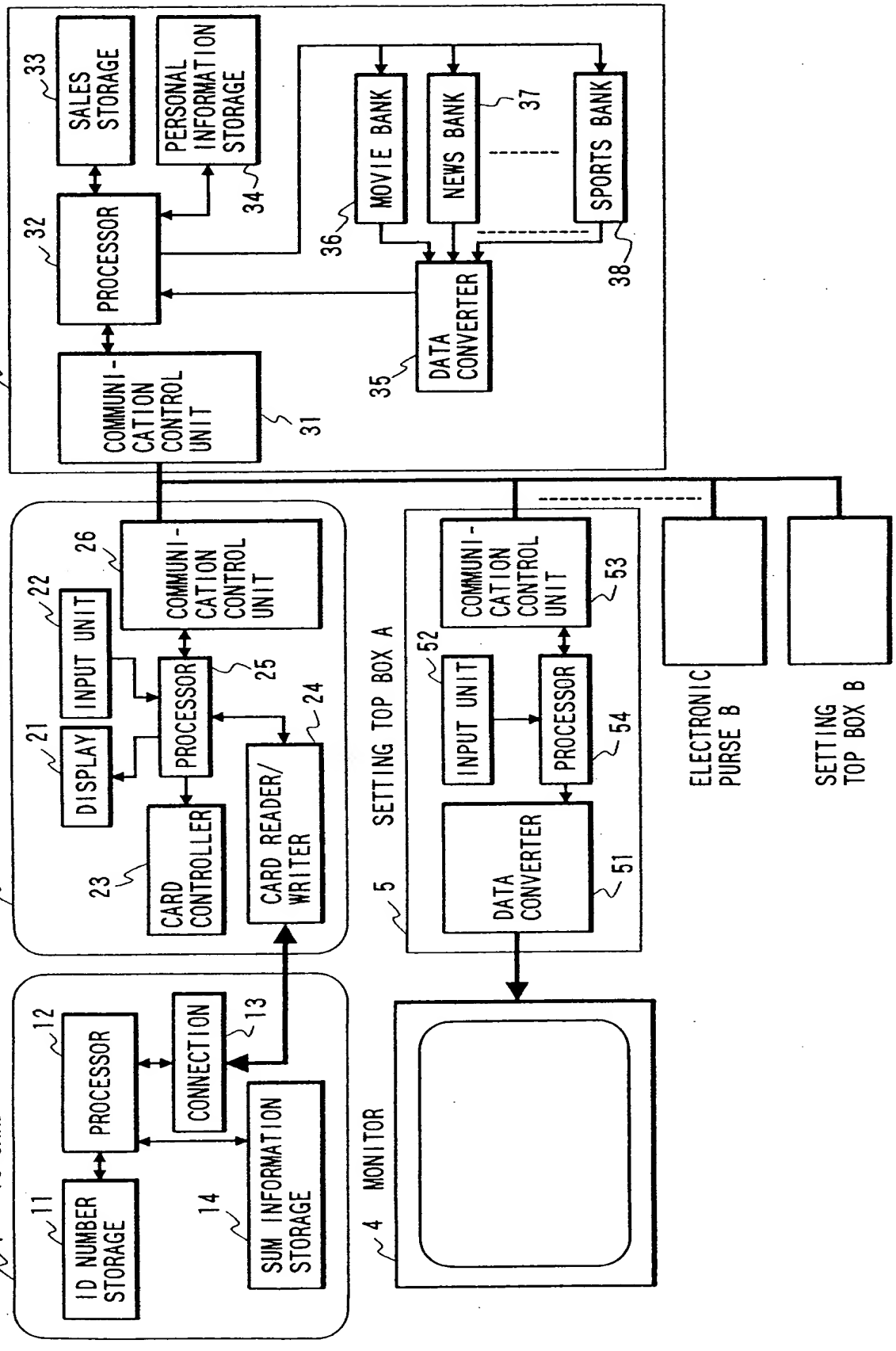
1 IC CARD
ID NUMBER STORAGE
11
PROCESSOR
12
CONNECTION
13
SUM INFORMATION STORAGE
14
2 ELECTRONIC PURSE A
DISPLAY
21
INPUT UNIT
22
CARD CONTROLLER
23
CARD READER/ WRITER
24
PROCESSOR
25
COMMUNI-CATION CONTROL UNIT
26
3 CENTER
COMMUNI-CATION CONTROL UNIT
31
PROCESSOR
32
SALES STORAGE
33
PERSONAL INFORMATION STORAGE
34
DATA CONVERTER
35
MOVIE BANK
36
NEWS BANK
37
SPORTS BANK
38
4 MONITOR
5 SETTING TOP BOX A
DATA CONVERTER
51
INPUT UNIT
52
COMMUNI-CATION CONTROL UNIT
53
PROCESSOR
54
ELECTRONIC PURSE B
SETTING TOP BOX B

FIG. 2(a)

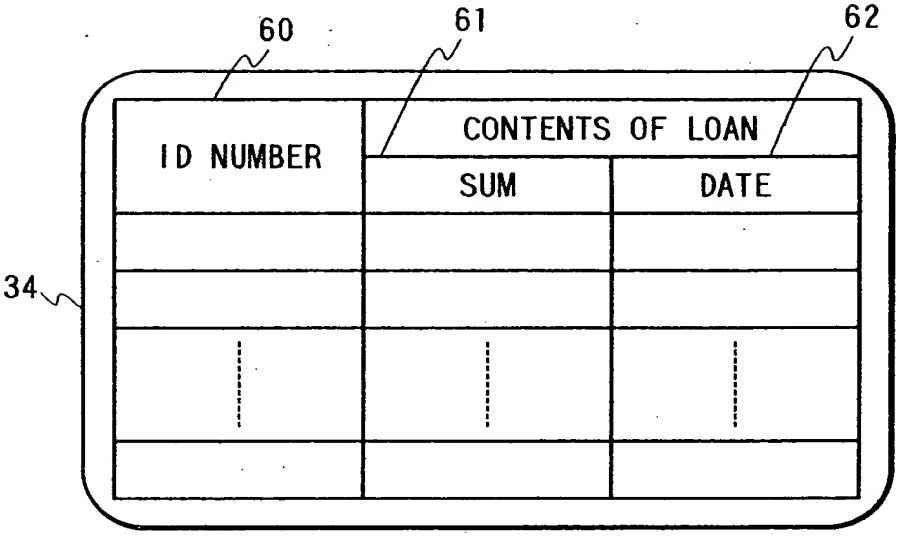
60
61
62
ID NUMBER
CONTENTS OF LOAN
SUM
DATE
34

FIG. 2(b)

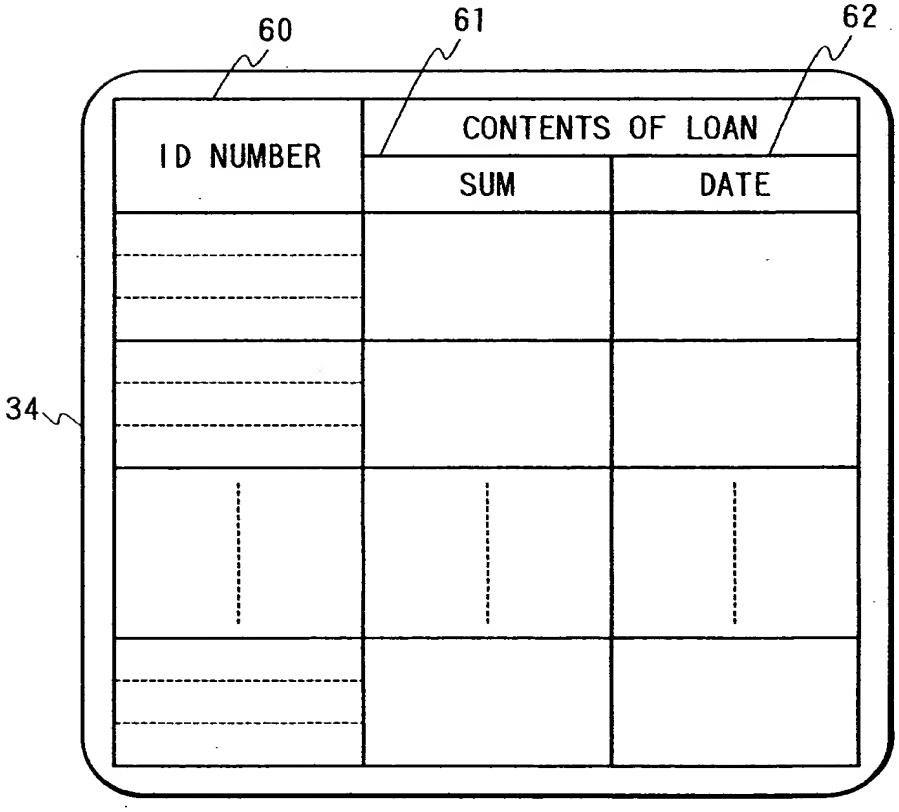
60
61
62
ID NUMBER
CONTENTS OF LOAN
SUM
DATE
34

FIG. 3

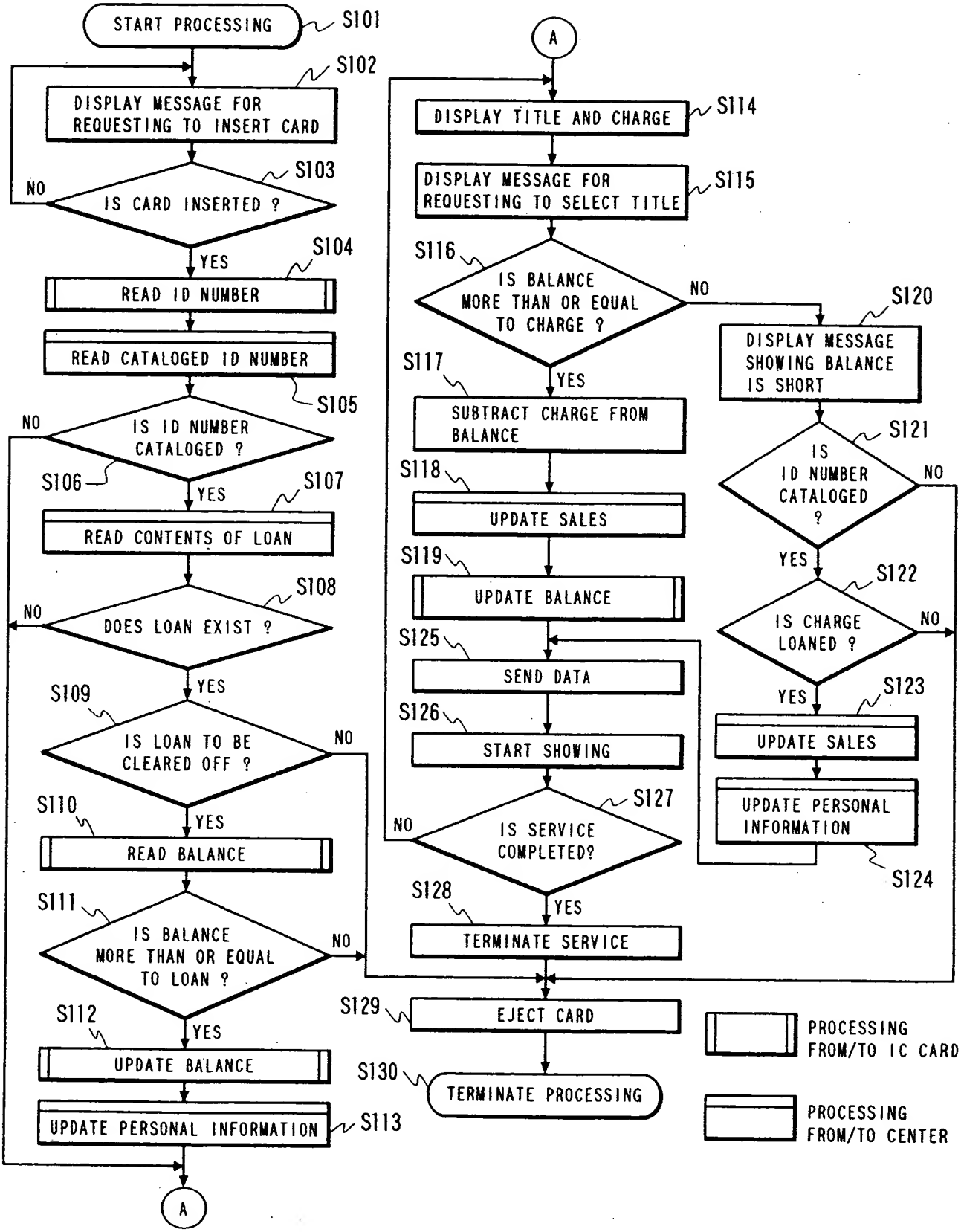
START PROCESSING
S101
S102
DISPLAY MESSAGE FOR REQUESTING TO INSERT CARD
S103
IS CARD INSERTED ?
NO
YES
S104
READ ID NUMBER
READ CATALOGED ID NUMBER
S105
IS ID NUMBER CATALOGED ?
NO
S106
YES
S107
READ CONTENTS OF LOAN
S108
DOES LOAN EXIST ?
NO
YES
S109
IS LOAN TO BE CLEARED OFF ?
NO
YES
S110
READ BALANCE
S111
IS BALANCE MORE THAN OR EQUAL TO LOAN ?
NO
YES
S112
UPDATE BALANCE
UPDATE PERSONAL INFORMATION
S113
A
A
DISPLAY TITLE AND CHARGE
S114
DISPLAY MESSAGE FOR REQUESTING TO SELECT TITLE
S115
S116
IS BALANCE MORE THAN OR EQUAL TO CHARGE ?
NO
YES
S117
SUBTRACT CHARGE FROM BALANCE
S118
UPDATE SALES
S119
UPDATE BALANCE
S125
SEND DATA
S126
START SHOWING
S127
IS SERVICE COMPLETED?
NO
YES
S128
TERMINATE SERVICE
S129
EJECT CARD
S130
TERMINATE PROCESSING
S120
DISPLAY MESSAGE SHOWING BALANCE IS SHORT
S121
IS ID NUMBER CATALOGED ?
NO
YES
S122
IS CHARGE LOANED ?
NO
YES
S123
UPDATE SALES
UPDATE PERSONAL INFORMATION
S124
PROCESSING FROM/TO IC CARD
PROCESSING FROM/TO CENTER

FIG. 4

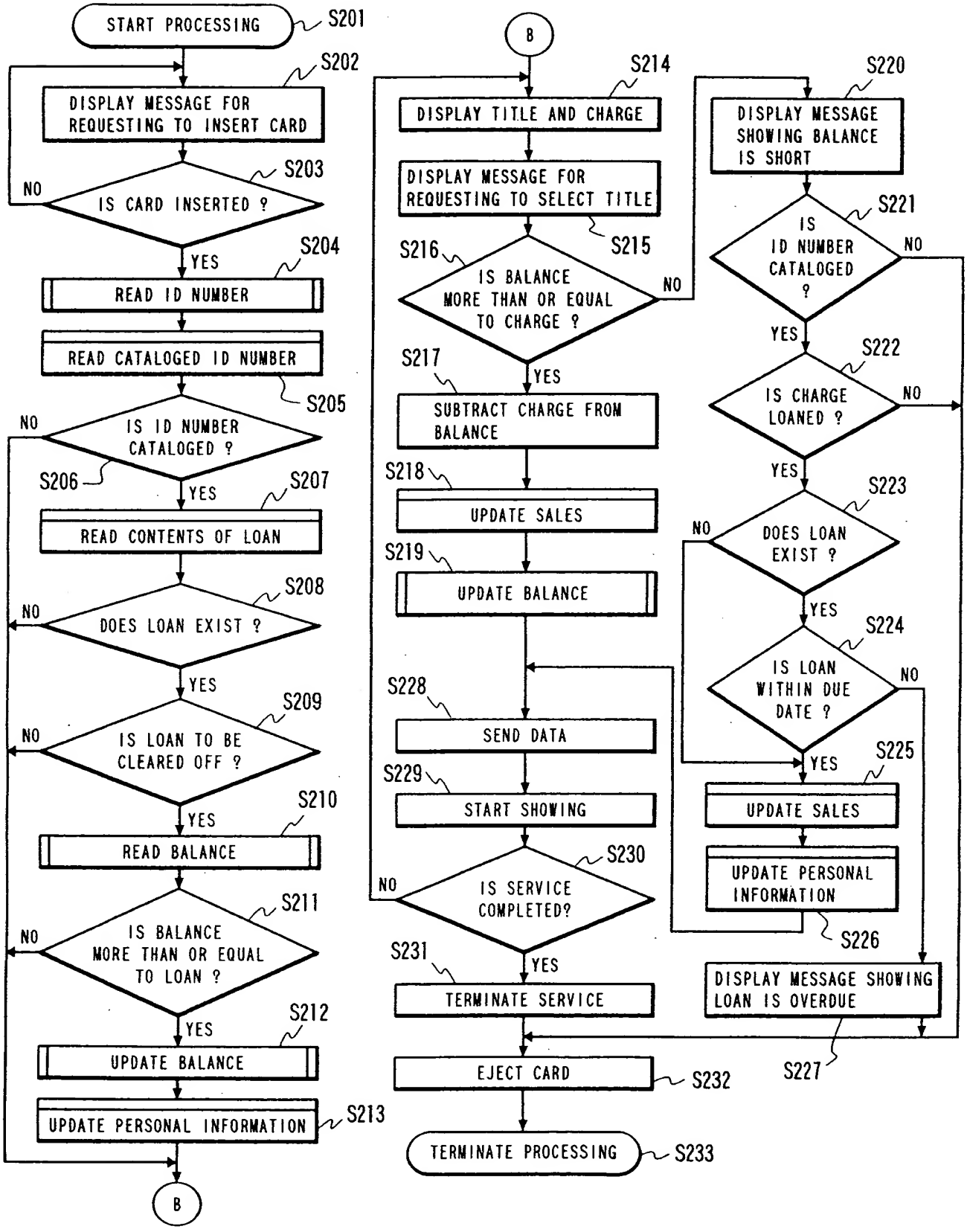

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FIG. 5

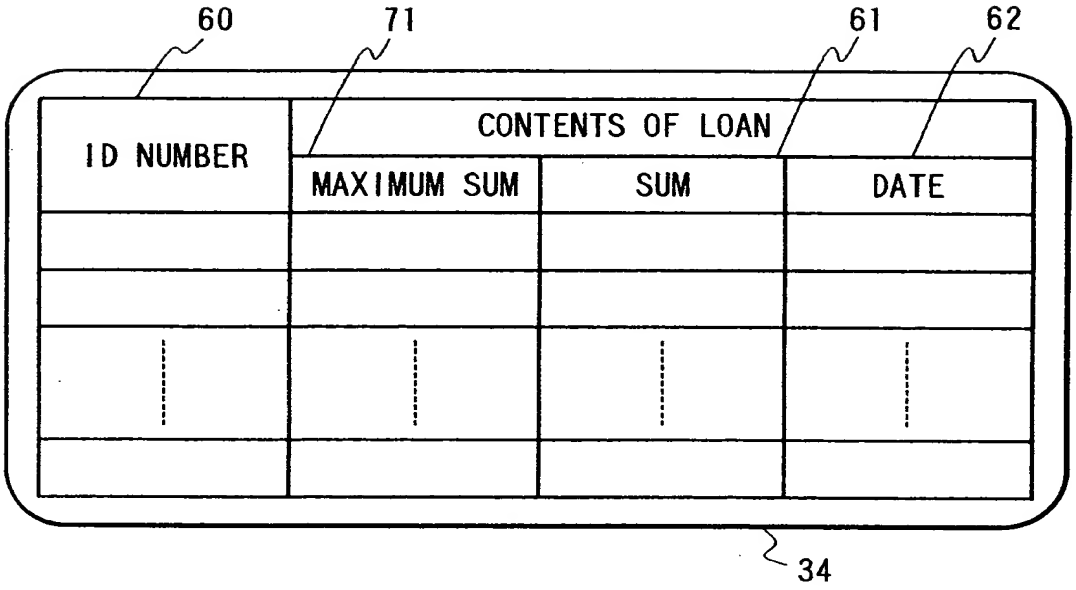

60
71
61
62
ID NUMBER
CONTENTS OF LOAN
MAXIMUM SUM
SUM
DATE
34

FIG. 10

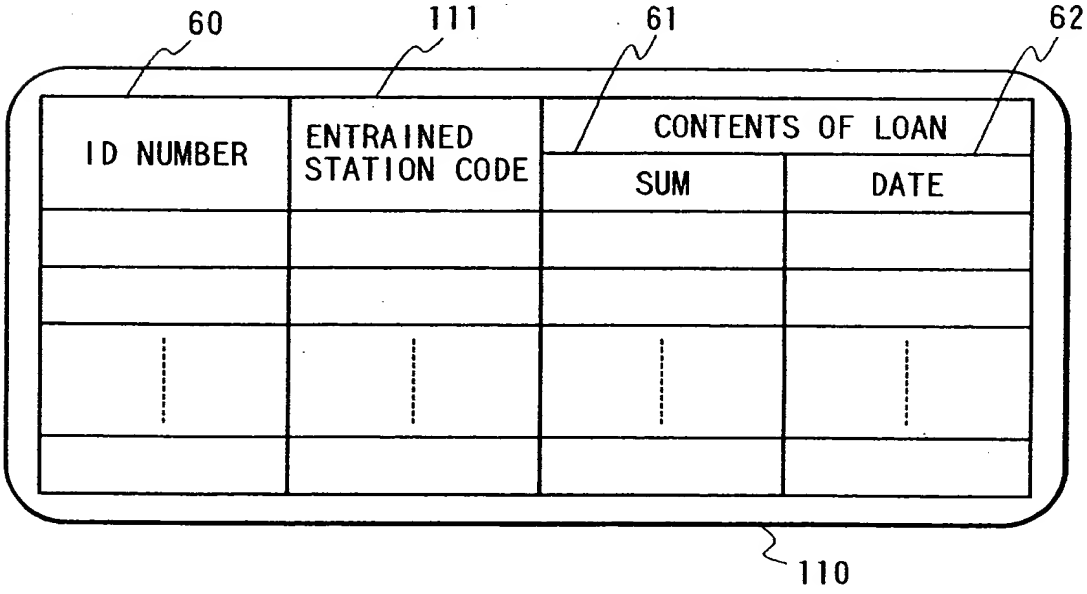

60
111
61
62
ID NUMBER
ENTRAINED STATION CODE
CONTENTS OF LOAN
SUM
DATE
110

FIG. 6

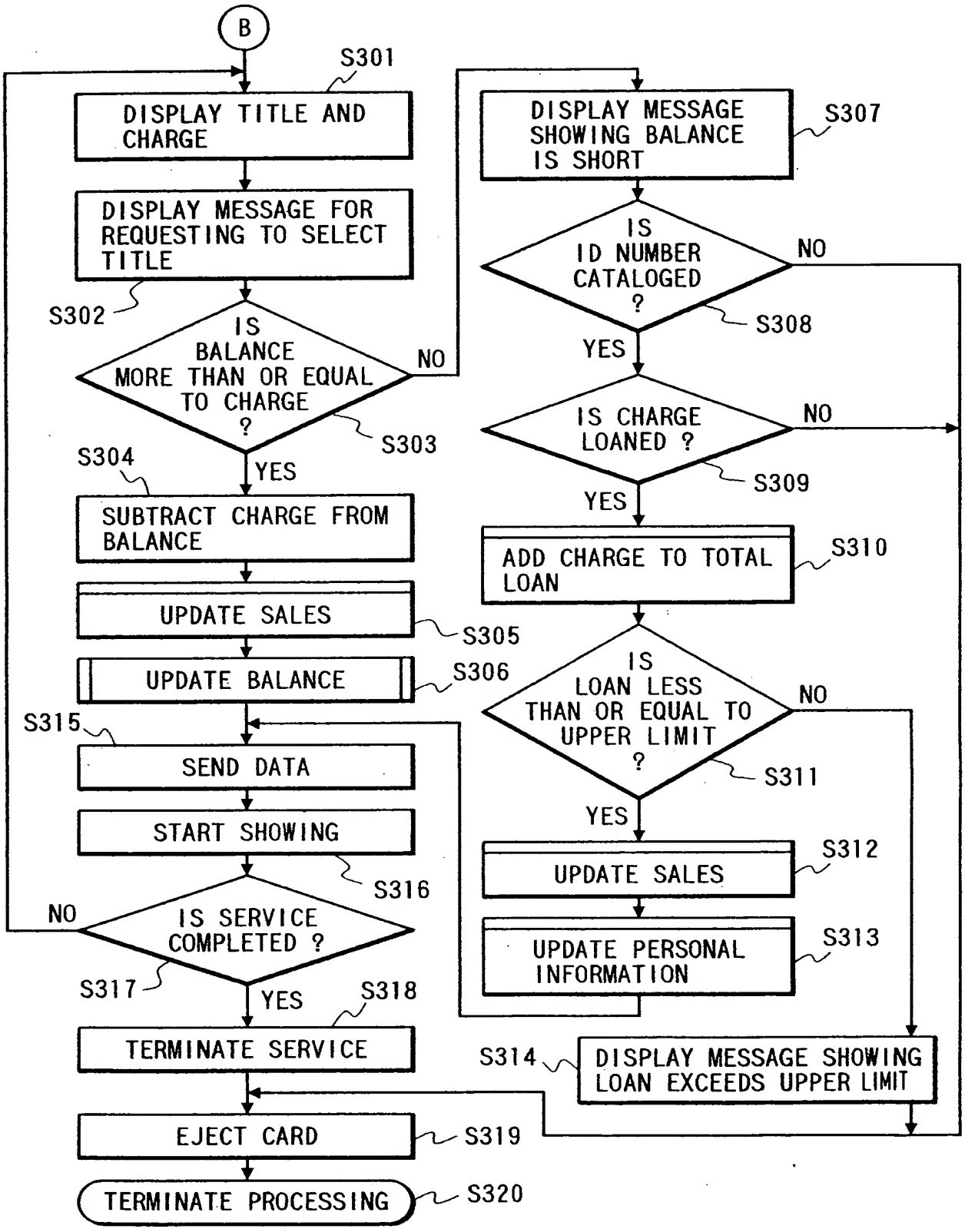

B
S301
DISPLAY TITLE AND CHARGE
DISPLAY MESSAGE FOR REQUESTING TO SELECT TITLE
S302
IS BALANCE MORE THAN OR EQUAL TO CHARGE ?
NO
S303
YES
S304
SUBTRACT CHARGE FROM BALANCE
UPDATE SALES
S305
UPDATE BALANCE
S306
S315
SEND DATA
START SHOWING
S316
NO
IS SERVICE COMPLETED ?
S317
YES
S318
TERMINATE SERVICE
EJECT CARD
S319
TERMINATE PROCESSING
S320
DISPLAY MESSAGE SHOWING BALANCE IS SHORT
S307
IS ID NUMBER CATALOGED ?
NO
S308
YES
IS CHARGE LOANED ?
NO
S309
YES
ADD CHARGE TO TOTAL LOAN
S310
IS LOAN LESS THAN OR EQUAL TO UPPER LIMIT ?
NO
S311
YES
UPDATE SALES
S312
UPDATE PERSONAL INFORMATION
S313
S314
DISPLAY MESSAGE SHOWING LOAN EXCEEDS UPPER LIMIT

FIG. 7

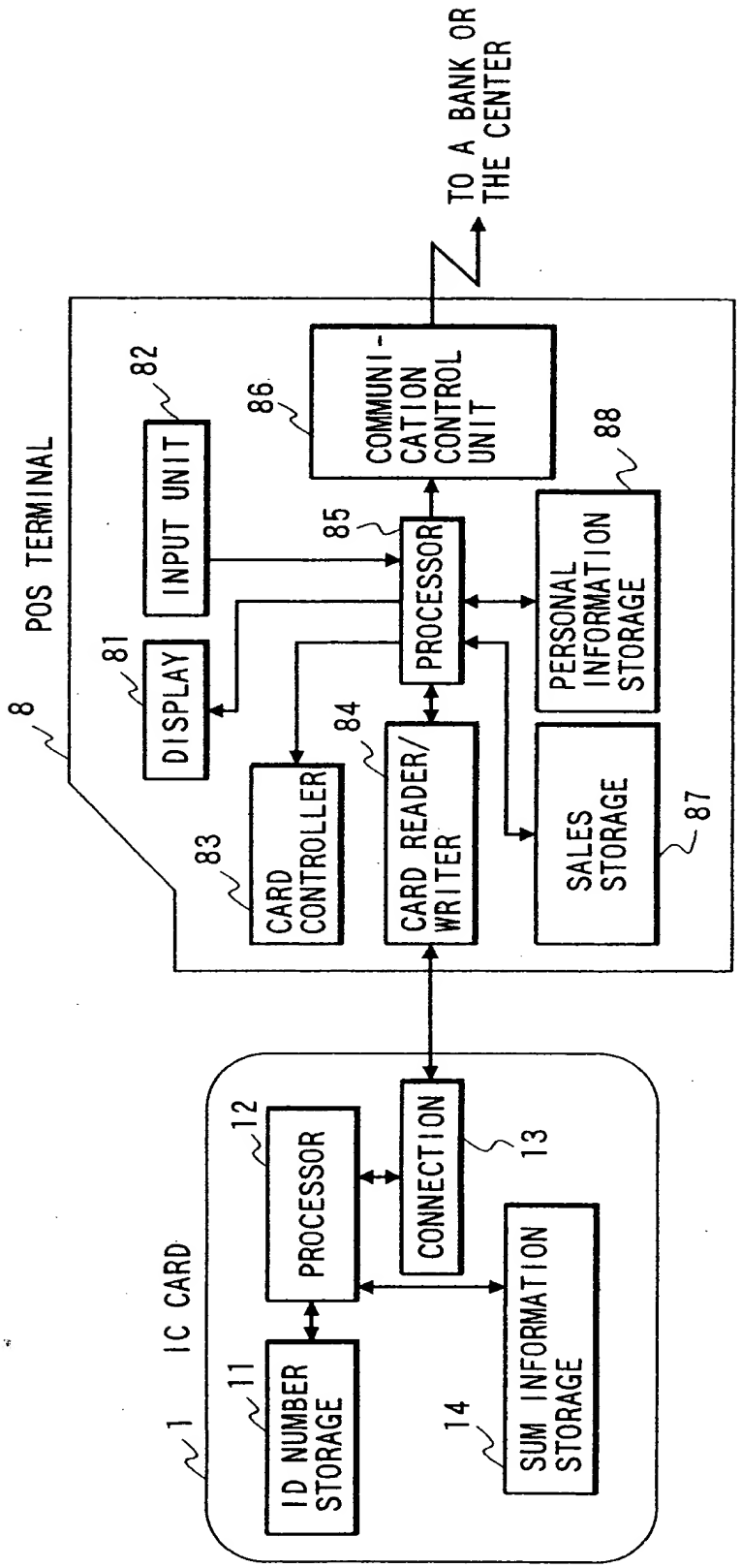

TO A BANK OR THE CENTER
POS TERMINAL
8
COMMUNI-CATION CONTROL UNIT
86
INPUT UNIT
82
DISPLAY
81
PROCESSOR
85
PERSONAL INFORMATION STORAGE
88
CARD CONTROLLER
83
CARD READER/ WRITER
84
SALES STORAGE
87
IC CARD
1
PROCESSOR
12
CONNECTION
13
ID NUMBER STORAGE
11
SUM INFORMATION STORAGE
14

FIG. 8

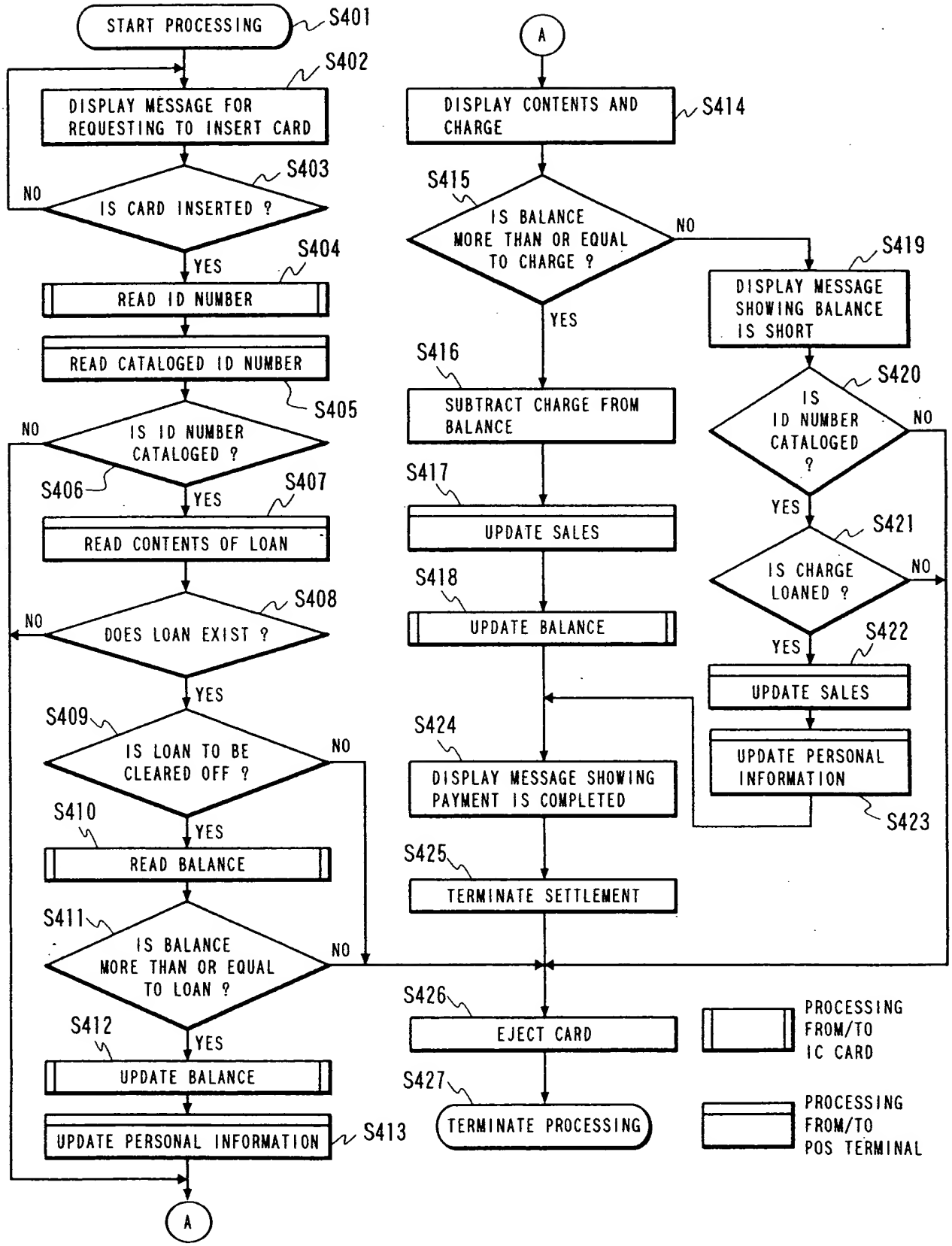

START PROCESSING
S401
S402
DISPLAY MESSAGE FOR REQUESTING TO INSERT CARD
S403
IS CARD INSERTED ?
NO
YES
S404
READ ID NUMBER
READ CATALOGED ID NUMBER
S405
IS ID NUMBER CATALOGED ?
NO
S406
YES
S407
READ CONTENTS OF LOAN
S408
DOES LOAN EXIST ?
NO
YES
S409
IS LOAN TO BE CLEARED OFF ?
NO
YES
S410
READ BALANCE
S411
IS BALANCE MORE THAN OR EQUAL TO LOAN ?
NO
YES
S412
UPDATE BALANCE
UPDATE PERSONAL INFORMATION
S413
A
A
DISPLAY CONTENTS AND CHARGE
S414
S415
IS BALANCE MORE THAN OR EQUAL TO CHARGE ?
NO
YES
S416
SUBTRACT CHARGE FROM BALANCE
S417
UPDATE SALES
S418
UPDATE BALANCE
S419
DISPLAY MESSAGE SHOWING BALANCE IS SHORT
S420
IS ID NUMBER CATALOGED ?
NO
YES
S421
IS CHARGE LOANED ?
NO
YES
S422
UPDATE SALES
UPDATE PERSONAL INFORMATION
S423
S424
DISPLAY MESSAGE SHOWING PAYMENT IS COMPLETED
S425
TERMINATE SETTLEMENT
S426
EJECT CARD
S427
TERMINATE PROCESSING
PROCESSING FROM/TO IC CARD
PROCESSING FROM/TO POS TERMINAL

FIG. 9

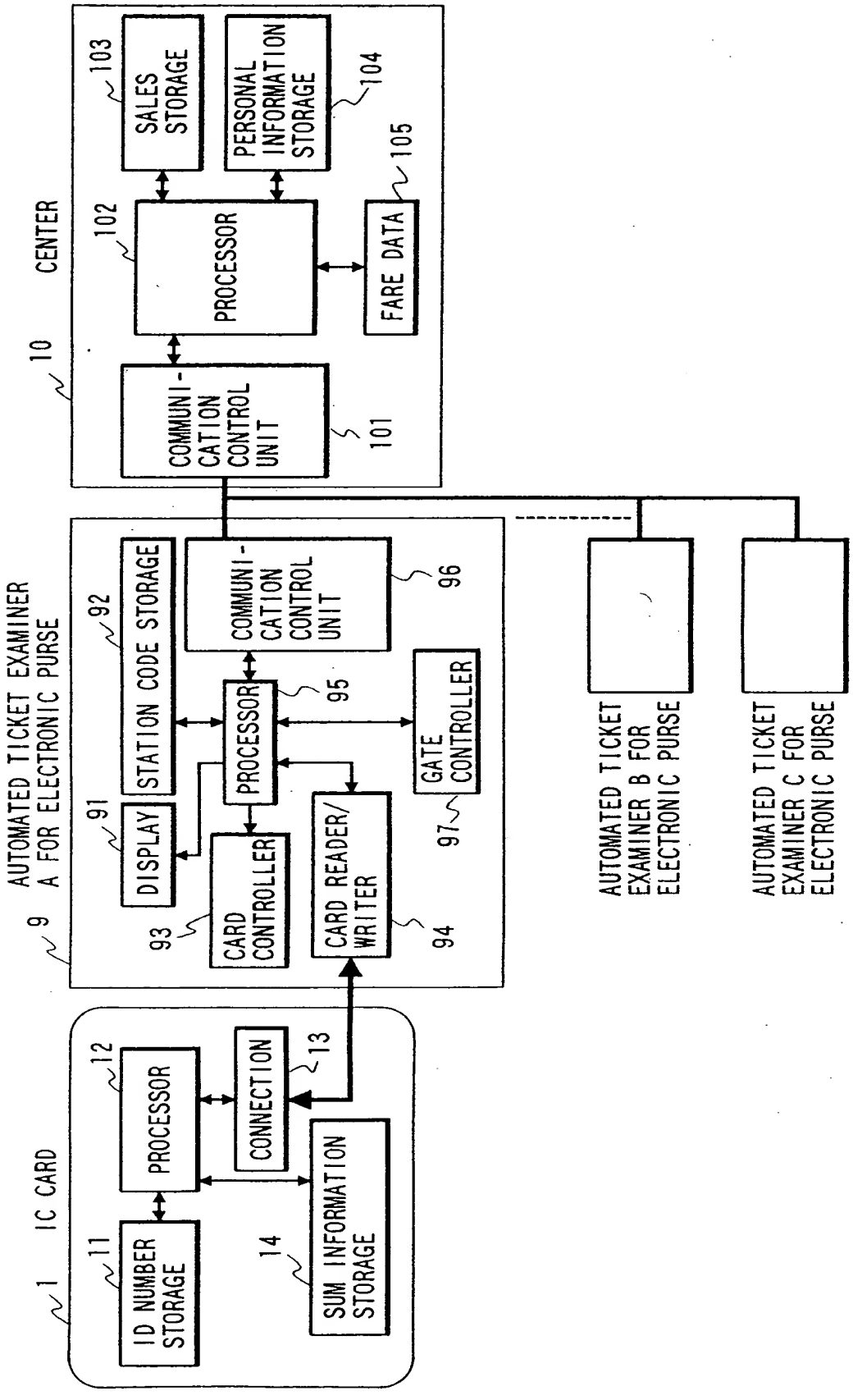

1 IC CARD
11 ID NUMBER STORAGE
12 PROCESSOR
13 CONNECTION
14 SUM INFORMATION STORAGE
9 AUTOMATED TICKET EXAMINER A FOR ELECTRONIC PURSE
91 DISPLAY
92 STATION CODE STORAGE
93 CARD CONTROLLER
94 CARD READER/WRITER
95 PROCESSOR
96 COMMUNICATION CONTROL UNIT
97 GATE CONTROLLER
10 CENTER
101 COMMUNICATION CONTROL UNIT
102 PROCESSOR
103 SALES STORAGE
104 PERSONAL INFORMATION STORAGE
105 FARE DATA
AUTOMATED TICKET EXAMINER B FOR ELECTRONIC PURSE
AUTOMATED TICKET EXAMINER C FOR ELECTRONIC PURSE

FIG. 11

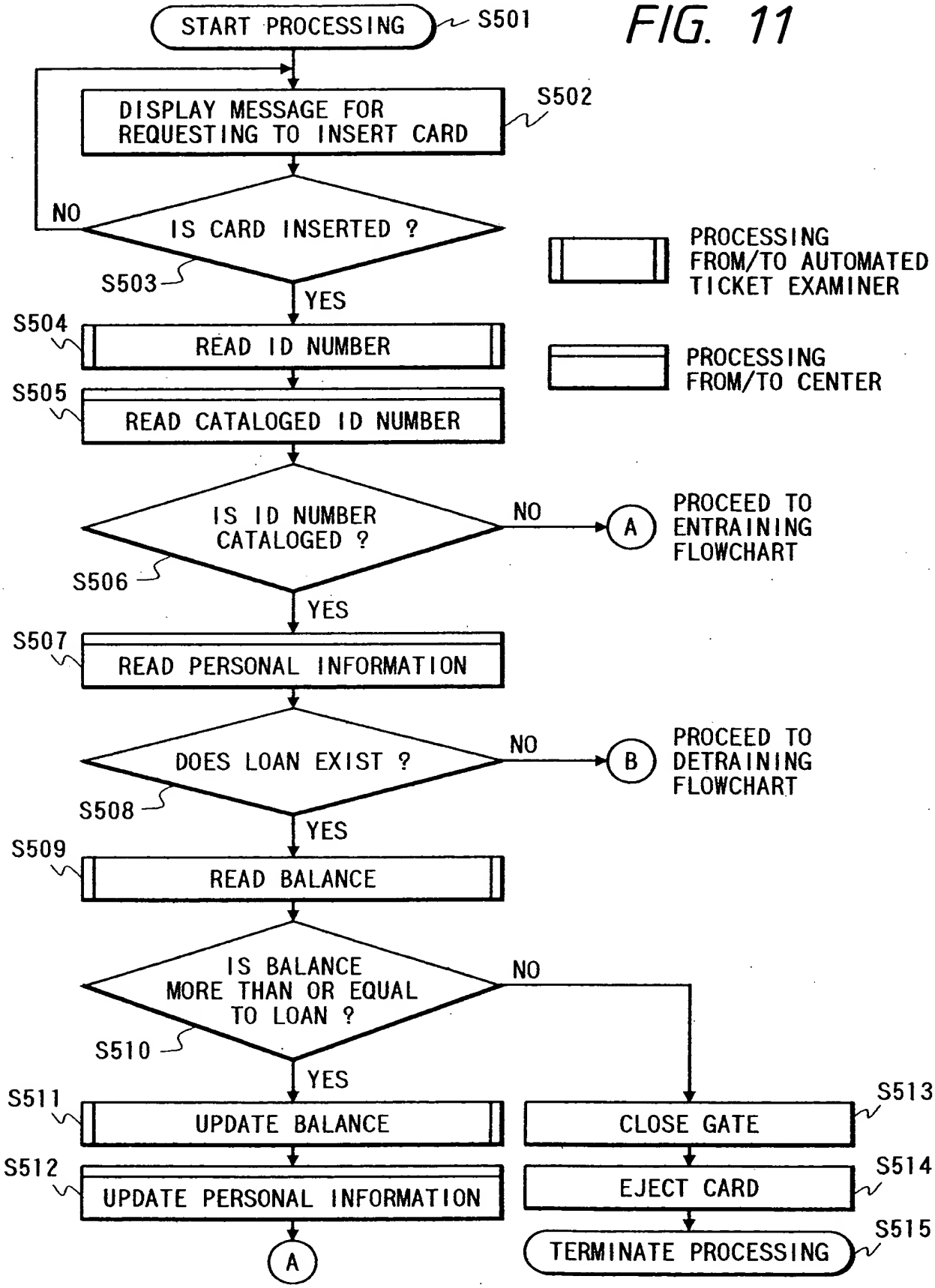

START PROCESSING
S501
DISPLAY MESSAGE FOR REQUESTING TO INSERT CARD
S502
IS CARD INSERTED ?
NO
S503
YES
READ ID NUMBER
S504
READ CATALOGED ID NUMBER
S505
IS ID NUMBER CATALOGED ?
NO
A
S506
YES
READ PERSONAL INFORMATION
S507
DOES LOAN EXIST ?
NO
B
S508
YES
READ BALANCE
S509
IS BALANCE MORE THAN OR EQUAL TO LOAN ?
NO
S510
YES
UPDATE BALANCE
S511
UPDATE PERSONAL INFORMATION
S512
A
CLOSE GATE
S513
EJECT CARD
S514
TERMINATE PROCESSING
S515
PROCESSING FROM/TO AUTOMATED TICKET EXAMINER
PROCESSING FROM/TO CENTER
PROCEED TO ENTRAINING FLOWCHART
PROCEED TO DETRAINING FLOWCHART

FIG. 12(a)

ENTRAINING FLOW

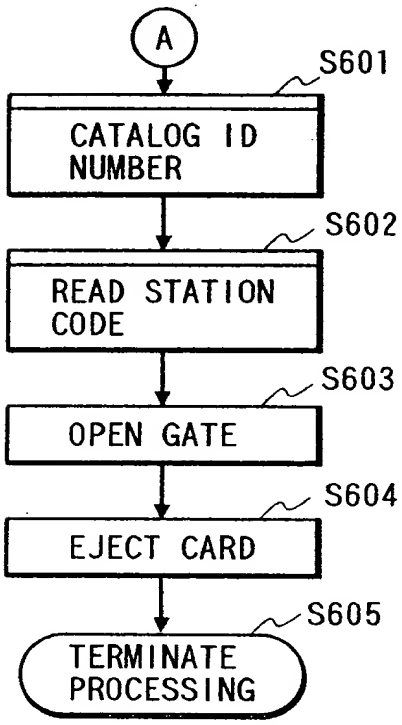


FIG. 12(b)

DETRAINING FLOW

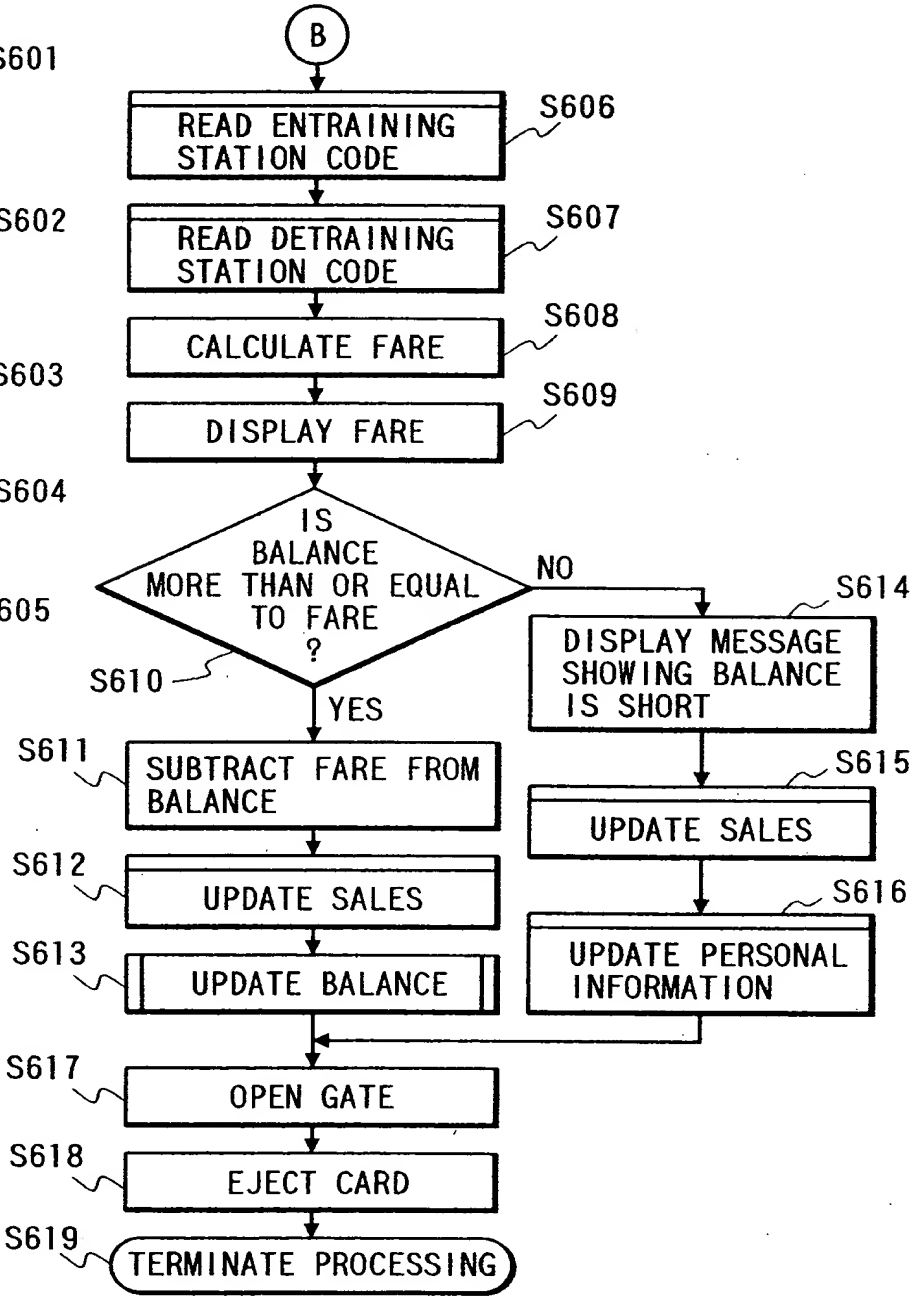
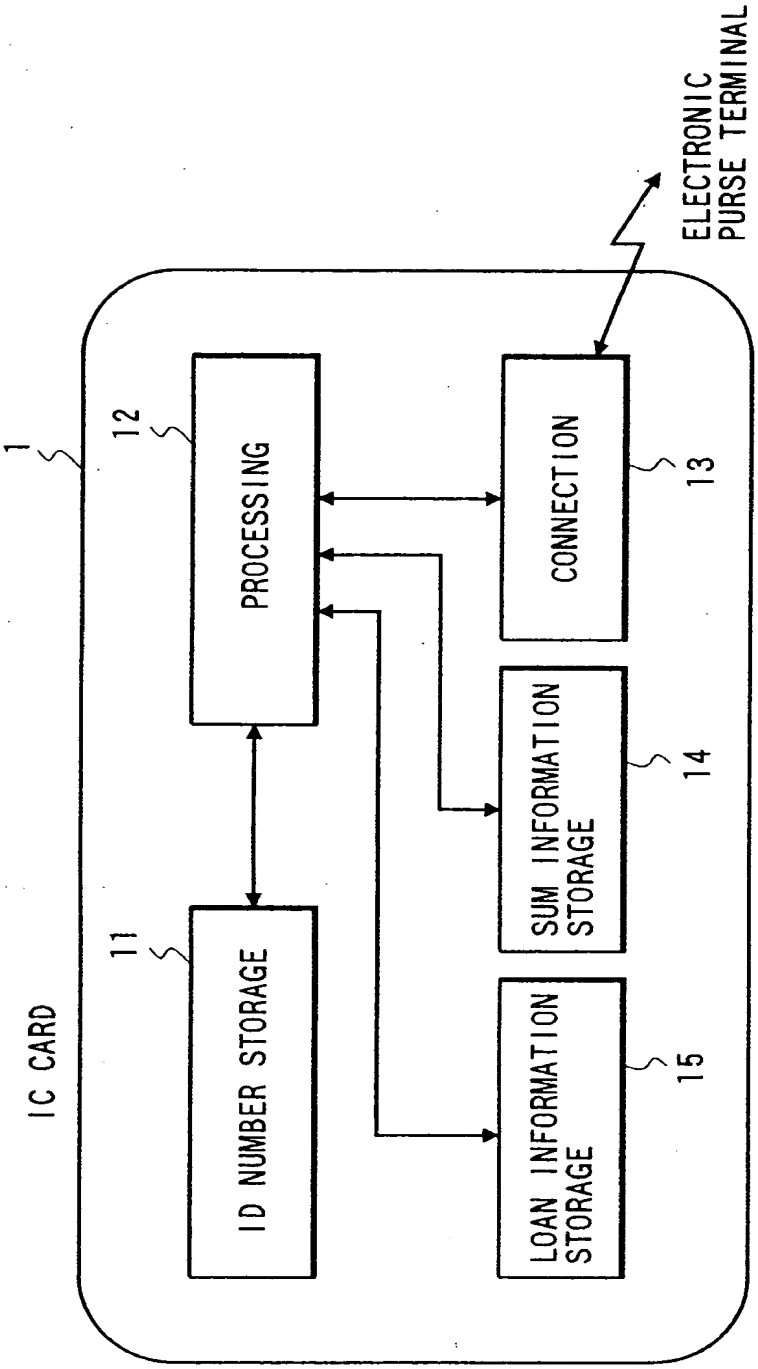


FIG. 13


ELECTRONIC PURSE TERMINAL
IC CARD
1
PROCESSING
12
CONNECTION
13
ID NUMBER STORAGE
11
SUM INFORMATION STORAGE
14
LOAN INFORMATION STORAGE
15